

**Abstract**

[0044] An improved predriver circuit for an output buffer is provided that can enable the output buffer to operate well within maximum and minimum IOL current specifications at lower internally regulated voltages. The predriver circuit comprises a limiter device configured to limit or otherwise regulate the maximum gate voltage provided to the gate of the pull-down transistor device. As a result, the pull-down transistor device can be sized optimally to provide additional margin to exceed the minimum IOL specification, while also improving the margin under the maximum IOL specification. The device is configured to limit the maximum gate voltage of the output pull-down transistor device to less than the maximum external power supply voltage.